Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A fluidic device for producing consecutive series of plurality of independent sample plugs, the device comprising:

a plurality of sample channels, each of said plurality of sample channels having a sample fluid inlet, said plurality of sample channels being adapted to be filled through said inlet with a sample fluid to be analyzed or treated in use of said device,

a flush fluid control means positioned to traverse said plurality of sample channels downstream the location where the sample fluid is analyzed or treated in said device, said flush fluid control means having flush fluid inlet means and flush fluid outlet means in communication with each of said plurality of sample channels, and said flush fluid control means being ~~adapted to control~~for controlling the fluid composition in said plurality of sample channels; and

at least one individual threshold provided in each of said

plurality of sample channels,

wherein the flush fluid control means ~~is operated to~~ simultaneously ~~produce~~ produces consecutively arranged series of independent sample plugs in each of the plurality of sample channels.

2.(Previously presented) The fluidic device according to claim 1, wherein said fluid device is a microfluidic device, at least partly manufactured by micromachining methods.

3.(Previously presented) The fluidic device according to claim 1, wherein said flush fluid control means controls said flush fluid content at said channel inlet by replacing a fixed amount of said sample fluid in said sample channels with flush fluid upstream of said fluid control means.

4.(Previously presented) The fluidic device according to claim 2, wherein said control means is a cross-over channel.

5. (Previously presented) The fluidic device according to claim 4, wherein the cross-over channel divides two arrays of microchannels.

6. (Previously presented) The fluidic device according to claim 1, wherein said fluid inlet and fluid outlet means of said fluid control means are inlet an outlet channels.

7. (Previously presented) The fluidic device according to claim 6, wherein said inlet and outlet channels comprise valve means for controlling flush fluid communication through said inlet and fluid communication through said outlet channel.

8. (Previously presented) The fluidic device according to claim 1, further comprising pressure regulating means for controlling flush fluid communication through said inlet, fluid communication through said outlet channel and fluid flow through said sample channels.

9. (Previously presented) The fluidic device according to claim 1, wherein the at least one threshold being arranged in said plurality of sample channels upstream of said flush fluid control means in the fluid flow direction of said sample fluid.

10. (Previously presented) The fluidic device according to claim

9, wherein said threshold is tuneable.

11. (Previously presented)   The fluidic device according to claim 9, wherein said threshold is in each of said channels is controlled by a physical constriction, a fluidophobic or hydrophobic effect, an electric field, a temperature or light excitation.

12. (Previously presented)   The fluidic device according to claim 9, wherein said threshold is controlled by a common control for all channels.

13. (Currently amended)   The fluidic device according to claim 1, wherein said control means is for forming independent sample plugs are formed in said sample channels by said control means.

14. (Previously presented)   The fluidic device according to claim 1, wherein said flush fluid is a gas or an inert liquid.

15. (Previously presented)   The fluidic device according to claim 1, wherein said fluidic device is arranged inside a compact housing, said housing being a diagnostic cartridge.

16. (Previously presented)   The fluidic device according to claim 1, wherein said fluidic device is selected from at least one of a diagnostic cartridge, a microfluidic chip, a lab-on-a-chip, a micro-total-analysis system, a biochip or a biosensor.

17. (Currently amended)   A method of generating independent fluid samples in a fluidic device for producing consecutive series of plurality of independent sample plugs for multichannel analysis, the ~~fluidic device~~method comprising acts of:

filling simultaneously a plurality of sample channels ~~each of said plurality of sample channels having~~through a sample fluid inlet~~, said plurality of sample channels being adapted to be filled through said inlet~~ with a sample fluid to be analyzed or treated in said device;

controlling a fluid composition in said plurality of sample channels via a flush fluid control means positioned to traverse said plurality of sample channels downstream the location where the sample fluid is analyzed or treated in said device, said flush fluid control means having flush fluid inlet means and flush fluid outlet means in communication with each of said plurality of sample

~~channels, and said flush fluid control means being adapted to control the fluid composition in said plurality of sample~~ channels; and

~~at least one individual threshold provided in each of said plurality of sample channels, wherein~~ operating the flush fluid control means ~~is operated~~ to simultaneously produce consecutively arranged series of independent sample plugs in each of the plurality of sample channels; and~~, said method comprising acts of~~

_____flushing of a flush fluid control means with flush fluid such that the consecutively arranged series of independent sample plugs are formed in each of the plurality of sample channels of said device, said sample plugs being separated by said flush fluid.

18. (Currently amended)   The method according to claim 17, said flush fluid control means having flush fluid inlet means and flush fluid outlet means, said method further comprising acts of

introducing sample liquid into said device through a sample fluid inlet into ~~a~~ the plurality of sample channels,

transporting said sample liquid across said flush fluid control means further into said plurality of sample channels until a threshold,

opening of said flush fluid inlet means and flush fluid outlet

means by means of ~~said~~ a valve means,

flushing of said flush fluid control means with a flush fluid,

transporting said sample liquid in said channels and said

flush liquid in said flush fluid control means across said flush

fluid control means further into said channels.

19. (Currently amended) The method according to claim 18, wherein a

plurality of consecutive independent sample ~~fluid~~ liquid plugs are

generated by repeating said acts of

opening of said flush fluid inlet means and flush fluid outlet

means by means of said valve means,

flushing of said flush fluid control means with a flush fluid,

transporting said sample liquid in said channels and said

flush liquid in said flush fluid control means across said flush

fluid control means further into said channels.

20. (Currently amended) The method according to claim 18, wherein

after the ~~step~~ act of flushing said flush fluid control means with

a flush fluid, comprising an act of:

re-closing said flush-fluid inlet means and flush-fluid outlet

means ~~are re-closed~~ by means of valve means, or

pressurizing said flush fluid ~~is put under pressure~~ for

transporting said sample fluid into said channels.

21. (Previously presented)   The method according to claim 17,

wherein said multichannel analysis is performed in a diagnostic

cartridge, a microfluidic chip, a lab-on-a-chip, a micro-total-

analysis system, a biochip or a biosensor.

22. (Previously presented)   The method according to claim 17,

wherein said multichannel analysis is performed by a microfluidic

device.

23. (Currently amended)   A computer-readable medium having embodied

thereon a computer program for processing by a computer for

generating consecutive series of independent fluid samples in a

fluidic device for multichannel analysis, the ~~fluidic~~

~~device~~computer program comprising:

a code segment for filling simultaneously a plurality of

sample channels ~~each of said plurality of sample channels~~

~~having~~through a sample fluid inlet~~, said plurality of sample~~

~~channels being adapted to be filled through said inlet~~ with a

sample fluid to be analyzed or treated in said device;

a code segment for controlling a fluid composition in said

plurality of sample channels via a flush fluid control means

positioned to traverse said plurality of sample channels downstream

the location where the sample fluid is analyzed or treated in said

device, said flush fluid control means having flush fluid inlet

means and flush fluid outlet means in communication with each of

said plurality of sample ~~channels, and said flush fluid control~~

~~means being adapted to control the fluid composition in said~~

~~plurality of sample~~ channels; and

~~at least one individual threshold provided in each of said~~

~~plurality of sample channels, wherein~~ a code segment for operating

the flush fluid control means ~~is operated~~ to simultaneously produce

consecutively arranged series of independent sample plugs in each

of the plurality of sample channels; and~~, the computer program~~

~~comprising~~

a code segment for flushing of a flush fluid control means

with flush fluid such that the consecutively arranged series of

independent sample fluid plugs are formed in each of the plurality

of sample channels of said device, said sample plugs being

separated by said flush fluid.

24. (Canceled)